Amendments to Claims

1. (Currently Amended) A method for encoding a video sequence having a plurality of frames, said video sequence comprising a background composite and foreground regions, comprising the step of:

encoding said video sequence based on balancing bits per pixel for said background composite once per said video sequence with bits per pixel for said foreground regions on a per frame basis to achieve similar quality between the background composite and the foreground regions in a reconstructed video sequence.

2. (Currently Amended) A method as in claim 1, ~~for encoding a video sequence, said video sequence comprising a background composite and foreground regions, comprising the step of:~~

~~encoding said video sequence based on balancing bits per pixel for said background composite with bits per pixel for said foreground regions to achieve similar quality between the background composite and the foreground regions in a reconstructed video sequence,~~ wherein said bits per pixel for said background composite is based on a number of bits in a compressed background composite, a number of bits for warp points of said background composite, and a number of pixels in said background composite.

3. (Original) A method as in claim 1, wherein said bits per pixel for said foreground regions is based on a number of bits in compressed foreground regions, a number of bits for shape of said foreground regions, and a number of pixels in said foreground regions.

4. (Original) A method as in claim 1, wherein said bits per pixel for said background composite and said bits per pixel for said foreground regions are related by a balancing factor.

5. (Original) A method as in claim 4, wherein said balancing factor comprises a correction factor.

6. (Original) A method as in claim 4, wherein said balancing factor comprises a quality factor.

7. (Original) A method as in claim 1, wherein said bits per pixel for said background composite is based on a number of bits in a compressed background composite, wherein said bits per pixel for said foreground regions is based on a number of bits in compressed foreground regions, and wherein said number of bits in said compressed background composite and said number of bits in said compressed foreground regions are related to a bit budget.

8. (Original) A method as in claim 1, wherein said step of encoding comprises the step of:

determining a background quantization step for said background composite based on a number of bits for a compressed background composite and an actual number of bits for said compressed background composite.

9. (Original) A method as in claim 8, wherein said step of determining said background quantization step comprises the step of:

encoding said background composite iteratively to obtain said actual number of bits for said compressed background composite.

10. (Original) A method as in claim 8, wherein said step of determining said background quantization step comprises the step of:

determining an estimated background quantization step based on an estimated number of bits for said compressed background composite and said number of bits for said compressed background composite, wherein said step of determining said background quantization step is further based on said estimated background quantization step.

11. (Original) A method as in claim 1, wherein said step of encoding comprises the step of:

determining a starting foreground quantization step for said foreground regions based on a background quantization step for said background composite and a desired bit rate.

12. (Original) A method as in claim 1, wherein said step of encoding comprises the step of:

determining estimated frame dropping for encoding of said foreground regions.

13. (Original) A method as in claim 12, wherein said step of determining said estimated frame dropping is based on a bit budget and a temporal sub-sampling.

14. (Original) A method as in claim 12, wherein said step of encoding further comprises the step of:

determining a background quantization step for said background composite based on said estimated frame dropping and an actual number of bits for said compressed background composite.

15. (Original) A method as in claim 1, further comprising the steps of:

determining estimated frame dropping for encoding of said foreground regions; and

determining actual frame dropping for encoding of said foreground regions; and

if said actual frame dropping differs from an estimated frame dropping, determining said background quantization step based on said actual frame dropping.

16. (Original) A computer system for performing the method of claim 1.

17. (Original) A computer-readable medium having software for performing the method of claim 1.

18. (Currently Amended) An apparatus for encoding a video sequence having a plurality of frames, said video sequence comprising a background composite and foreground regions, comprising:

a computer to encode said video sequence based on balancing bits per pixel for said background composite once per said video sequence with bits per pixel for said foreground regions on a per frame basis to achieve similar quality between the background composite and the foreground regions in a reconstructed video sequence.

19. (Previously Presented) A method for encoding a video sequence having a plurality of frames, said video sequence comprising a background composite and foreground regions, comprising the steps of:

determining a background quantization step for said background composite based on a number of bits for a compressed background composite and an actual number of bits for said compressed background composite;

encoding said background composite once per said video sequence based on said background quantization step;

determining a starting foreground quantization step for said foreground regions based on said background quantization step and a desired bit rate; and

encoding said foreground regions on a per frame basis based on said starting foreground quantization step to achieve similar quality between the background composite and the foreground regions in a reconstructed video sequence.

20. (Original) A method as in claim 19, wherein said step of determining said background quantization step comprises the step of:

encoding said background composite iteratively to obtain said actual number of bits for said compressed background composite.

21. (Original) A method as in claim 19, wherein said step of determining said background quantization step comprises the step of:

determining an estimated background quantization step based on an estimated number of bits for said compressed background composite and said number of bits for said compressed background composite, wherein said step of determining said background quantization step is further based on said estimated background quantization step.

22. (Original) A method as in claim 19, further comprising the step of:

determining estimated frame dropping for encoding of said foreground regions, wherein determining said background quantization step is further based on said estimated frame dropping.

23. (Original) A method as in claim 22, wherein said step of determining said estimated frame dropping is based on a bit budget and a temporal sub-sampling.

24. (Original) A method as in claim 22, further comprising the steps of:

determining actual frame dropping for encoding of said foreground regions; and

if said actual frame dropping differs from said estimated frame dropping, re-determining

said background quantization step based on said actual frame dropping.

25. (Original) A computer system for performing the method of claim 19.

26. (Original) A computer-readable medium having software for performing the method of claim 19.

27. (Currently Amended) An apparatus for encoding a video sequence having a plurality of frames, said video sequence comprising a background composite and foreground regions, comprising:

means for determining a background quantization step for said background composite based on a number of bits for a compressed background composite and an actual number of bits for said compressed background composite;

means for encoding said background composite once per said video sequence based on said background quantization step;

means for determining a starting foreground quantization step for said foreground regions based on said background quantization step and a desired bit rate; and

means for encoding said foreground regions on a per frame basis based on said starting foreground quantization step to achieve similar quality between the background composite and the foreground regions in a reconstructed video sequence.

28. (Original) An apparatus as in claim 27, further comprising:

means for determining estimated frame dropping for encoding of said foreground regions,

wherein said means for determining said background quantization step is further based on said estimated frame dropping.

29. (Previously Presented) An apparatus as in claim 28, further comprising:

means for determining actual frame dropping for encoding of said foreground regions; and

means for re-determining said background quantization step based on said actual frame dropping if said actual frame dropping differs from said estimated frame dropping.

30. (New) An apparatus for encoding a video sequence having a plurality of frames, said video sequence comprising a background composite and foreground regions, wherein the apparatus is adapted to:

encode said video sequence based on balancing bits per pixel for said background composite once per said video sequence with bits per pixel for said foreground regions on a per frame basis to achieve similar quality between the background composite and the foreground regions in a reconstructed video sequence.

31. (New) An apparatus of claim 30, wherein the apparatus comprises application specification hardware to emulate a computer and/or software.